

Safety Data Sheet

according to Regulation (EC) No 1907/2006

Polyurea resin crystal clear (HARDENER)

Print date: 09.04.2014

Product code: 170202-GHS-2014

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SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Polyurea resin crystal clear (HARDENER)

CAS No: 28182-81-2

EC No: 500-060-2

1.2. Relevant identified uses of the substance or mixture and uses advised against

Use of the substance/mixture

Hardener (Crosslinker)

1.3. Details of the supplier of the safety data sheet

Company name: R&G Faserverbundwerkstoffe GmbH

Composite Technology

Street: Im Meißel 7 - 13

Place: D-71111 Waldenbuch

Post-office box: 1145

D-71107 Waldenbuch

Telephone: +49-7157-530460

Telefax: +49-7157-530470

e-mail: info@r-g.de

Internet: www.r-g.de

Responsible Department: Management

1.4. Emergency telephone number: Vergiftungs-Informations-Zentrale Freiburg
Tel: +49 (0)761 19240

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Indications of danger: Xn - Harmful, Xi - Irritant

R phrases:

Harmful by inhalation.

Irritating to respiratory system.

May cause sensitisation by skin contact.

GHS classification

Hazard categories:

Acute toxicity: Acute Tox. 4

Respiratory/skin sensitization: Skin Sens. 1

Specific target organ toxicity - single exposure: STOT SE 3

Hazard Statements:

Harmful if inhaled.

May cause an allergic skin reaction.

May cause respiratory irritation.

2.2. Label elements

Hazardous components which must be listed on the label

Hexamethylene diisocyanate, oligomers

Signal word: Warning

Pictograms: GHS07



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Hazard statements

- H317 May cause an allergic skin reaction.
 H332 Harmful if inhaled.
 H335 May cause respiratory irritation.

Precautionary statements

- P261 Avoid breathing dust/fume/gas/mist/vapours/spray.
 P271 Use only outdoors or in a well-ventilated area.
 P272 Contaminated work clothing should not be allowed out of the workplace.
 P280 Wear protective gloves/protective clothing/eye protection/face protection.
 P302+P352 IF ON SKIN: Wash with plenty of water.
 P321 Specific treatment (see General information on this label).
 P333+P313 If skin irritation or rash occurs: Get medical advice/attention.
 P363 Wash contaminated clothing before reuse.
 P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.
 P312 Call a POISON CENTER/doctor if you feel unwell.
 P403+P233 Store in a well-ventilated place. Keep container tightly closed.
 P405 Store locked up.
 P501 Dispose of contents/container to Dispose of waste according to applicable legislation..

Special labelling of certain mixtures

- EUH204 Contains isocyanates. May produce an allergic reaction.

2.3. Other hazards

No information available.

SECTION 3: Composition/information on ingredients

3.1. Substances

Hazardous components

EC No	Chemical name	Quantity
CAS No	Classification	
Index No	GHS classification	
REACH No		
500-060-2	Hexamethylene diisocyanate, oligomers	100 %
28182-81-2	Xn - Harmful, Xi - Irritant R20-37-43	
	Acute Tox. 4, Skin Sens. 1, STOT SE 3; H332 H317 H335	

Full text of R and H phrases: see Section 16.

SECTION 4: First aid measures

4.1. Description of first aid measures

After inhalation

Provide fresh air. If breathing is irregular or stopped, administer artificial respiration. Medical treatment necessary.

After contact with skin

After contact with skin, wash immediately with polyethylene glycol, followed by plenty of water. Take off immediately all contaminated clothing and wash it before reuse. Medical treatment necessary.

After contact with eyes

After contact with the eyes, rinse with water with the eyelids open for a sufficient length of time, then consult an ophthalmologist immediately.

After ingestion

Rinse mouth immediately and drink plenty of water. Do not give fatty oils and milk.

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4.2. Most important symptoms and effects, both acute and delayed

No information available.

4.3. Indication of any immediate medical attention and special treatment needed

Treat symptomatically.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media

Co-ordinate fire-fighting measures to the fire surroundings.

5.2. Special hazards arising from the substance or mixture

Non-flammable.

5.3. Advice for firefighters

Wear a self-contained breathing apparatus and chemical protective clothing. Full protection suit.

Additional information

Suppress gases/vapours/mists with water spray jet. Collect contaminated fire extinguishing water separately. Do not allow entering drains or surface water.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Provide adequate ventilation. Do not breathe gas/fumes/vapour/spray. Avoid contact with skin, eyes and clothes. Use personal protection equipment.

6.2. Environmental precautions

Do not allow to enter into surface water or drains.

6.3. Methods and material for containment and cleaning up

Absorb with liquid-binding material (e.g. sand, diatomaceous earth, acid- or universal binding agents). Treat the recovered material as prescribed in the section on waste disposal.

6.4. Reference to other sections

Safe handling: see section 7

Personal protection equipment: see section 8

Disposal: see section 13

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Advice on safe handling

If handled uncovered, arrangements with local exhaust ventilation have to be used. Do not breathe gas/fumes/vapour/spray.

Advice on protection against fire and explosion

No special fire protection measures are necessary.

7.2. Conditions for safe storage, including any incompatibilities

Requirements for storage rooms and vessels

Keep container tightly closed.

Advice on storage compatibility

No special measures are necessary.

7.3. Specific end use(s)

Hardener (Crosslinker)

SECTION 8: Exposure controls/personal protection

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8.1. Control parameters

Exposure limits (EH40)

CAS No	Substance	ppm	mg/m ³	fibres/ml	Category	Origin
-	Isocyanates, all (as -NCO) Except methyl isocyanate	-	0.02		TWA (8 h)	WEL
		-	0.07		STEL (15 min)	WEL

8.2. Exposure controls



Appropriate engineering controls

If handled uncovered, arrangements with local exhaust ventilation have to be used. Do not breathe gas/fumes/vapour/spray.

Protective and hygiene measures

Remove contaminated, saturated clothing immediately. Draw up and observe skin protection programme. Wash hands and face before breaks and after work and take a shower if necessary. When using do not eat or drink.

Eye/face protection

Wear eye/face protection.

Hand protection

When handling with chemical substances, protective gloves must be worn with the CE-label including the four control digits. The quality of the protective gloves resistant to chemicals must be chosen as a function of the specific working place concentration and quantity of hazardous substances. For special purposes, it is recommended to check the resistance to chemicals of the protective gloves mentioned above together with the supplier of these gloves.

Skin protection

Wear suitable protective clothing.

Respiratory protection

In case of inadequate ventilation wear respiratory protection.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state: liquid
 Colour: colourless
 Odour: characteristic

pH-Value: not determined

Changes in the physical state

Melting point: not determined

Initial boiling point and boiling range: not determined

Flash point: 193 °C

Flammability

Solid: not applicable

Gas: not applicable

Test method

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Lower explosion limits: not determined
 Upper explosion limits: not determined
 Ignition temperature: 440 °C

Auto-ignition temperature

Solid: not applicable
 Gas: not applicable
 Decomposition temperature: not determined

Oxidizing properties

Not oxidizing.

Vapour pressure: < 0,0001 hPa
 (at 20 °C)

Density (at 20 °C): 1,15 g/cm³

Water solubility: easily soluble

Solubility in other solvents

not determined

Partition coefficient: @1201.B120976: 8,38

Viscosity / dynamic: 958 mPa·s
 (at 20 °C)

Vapour density: not determined

Evaporation rate: not determined

9.2. Other information

Solid content: not determined

SECTION 10: Stability and reactivity**10.1. Reactivity**

No hazardous reaction when handled and stored according to provisions.

10.2. Chemical stability

Danger of polymerisation.

10.3. Possibility of hazardous reactions

Polymerization with heat evolution may occur in the presence of radical forming substances (e.g. peroxides), reducing substances, and/or heavy metal ions.

Reacts with : Air, humid & Water. Due to gaseous decomposition products, overpressure can occur in tightly sealed containers.

10.4. Conditions to avoid

none

10.5. Incompatible materials

Keep away from: Radical former, Peroxide, Reducing agent. Air, humid & Water.

10.6. Hazardous decomposition products

Isocyanate

SECTION 11: Toxicological information**11.1. Information on toxicological effects****Acute toxicity**

Harmful if inhaled.

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CAS No	Chemical name				Exposure routes	Method	Dose	Species	Source
28182-81-2	Hexamethylene diisocyanate, oligomers				oral	LD50	> 5000 mg/kg	Rat	OECD 401
					dermal	LD50	> 2000 mg/kg	Rat	OECD 402
					inhalative (4 h) aerosol	LC50	3,9 mg/l	Rat	OECD 403

Irritation and corrosivity

Irritating to eyes, respiratory system and skin.

Sensitising effects

May cause sensitization by skin contact.

Additional information on tests

Classification according to Regulation (EC) No. 1272/2008 [CLP]

SECTION 12: Ecological information

12.1. Toxicity

The product is not: @1301.B130029.

CAS No	Chemical name				Aquatic toxicity	Method	Dose	[h] [d]	Species	Source
28182-81-2	Hexamethylene diisocyanate, oligomers				Acute fish toxicity	LC50	> 100 mg/l	96 h	Brachydanio rerio (zebra-fish)	EU Method C.1
					Acute algae toxicity	ErC50	> 1000 mg/l	72 h	Desmodesmus subspicatus.	OECD 201
					Acute crustacea toxicity	EC50	127 mg/l	48 h	Daphnia magna (Big water flea)	EU Method C.2

12.2. Persistence and degradability

Poorly biodegradable.

CAS No	Chemical name				Method	Value	d	Source
28182-81-2	Hexamethylene diisocyanate, oligomers				OECD 301 D	1%	28	
					Not readily biodegradable (according to OECD criteria)			

12.3. Bioaccumulative potential

The product has not been tested.

BCF

CAS No	Chemical name	BCF	Species	Source
28182-81-2	Hexamethylene diisocyanate, oligomers	367,7		

12.4. Mobility in soil

The product has not been tested.

12.5. Results of PBT and vPvB assessment

The product has not been tested.

12.6. Other adverse effects

No information available.

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Further information

Do not allow to enter into surface water or drains. Do not allow to enter into soil/subsoil.

SECTION 13: Disposal considerations**13.1. Waste treatment methods****Advice on disposal**

Do not allow to enter into surface water or drains. Do not allow to enter into soil/subsoil. Dispose of waste according to applicable legislation.

Waste disposal number of waste from residues/unused products

080501 WASTES FROM THE MANUFACTURE, FORMULATION, SUPPLY AND USE (MFSU) OF COATINGS (PAINTS, VARNISHES AND VITREOUS ENAMELS), ADHESIVES, SEALANTS AND PRINTING INKS; wastes not otherwise specified in 08; waste isocyanates
Classified as hazardous waste.

Waste disposal number of used product

080410 WASTES FROM THE MANUFACTURE, FORMULATION, SUPPLY AND USE (MFSU) OF COATINGS (PAINTS, VARNISHES AND VITREOUS ENAMELS), ADHESIVES, SEALANTS AND PRINTING INKS; wastes from MFSU of adhesives and sealants (including waterproofing products); waste adhesives and sealants other than those mentioned in 08 04 09

Waste disposal number of contaminated packaging

080501 WASTES FROM THE MANUFACTURE, FORMULATION, SUPPLY AND USE (MFSU) OF COATINGS (PAINTS, VARNISHES AND VITREOUS ENAMELS), ADHESIVES, SEALANTS AND PRINTING INKS; wastes not otherwise specified in 08; waste isocyanates
Classified as hazardous waste.

Contaminated packaging

Non-contaminated packages may be recycled. Handle contaminated packages in the same way as the substance itself.

SECTION 14: Transport information**Land transport (ADR/RID)**

14.1. UN number: No dangerous good in sense of this transport regulation.
14.2. UN proper shipping name: No dangerous good in sense of this transport regulation.
14.3. Transport hazard class(es): No dangerous good in sense of this transport regulation.
14.4. Packing group: No dangerous good in sense of this transport regulation.

14.5. Environmental hazards

ENVIRONMENTALLY HAZARDOUS: no

14.6. Special precautions for user

No information available.

14.7. Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code

not applicable

SECTION 15: Regulatory information**15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture****EU regulatory information**

1999/13/EC (VOC): 100 % (1150 g/l)

Additional informationTo follow: 850/2004/EC , 79/117/EEC , 689/2008/EC
Regulation (EC) No. 2037/2000 concerning materials, which cause damage to the ozone layer.

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National regulatory information

Employment restrictions: Observe employment restrictions for young people. Observe employment restrictions for child bearing mothers and nursing.

Water contaminating class (D): 2 - water contaminating

15.2. Chemical safety assessment

Chemical safety assessments for substances in this mixture were not carried out.

SECTION 16: Other information

Abbreviations and acronyms

ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)
IMDG: International Maritime Code for Dangerous Goods
IATA: International Air Transport Association
GHS: Globally Harmonized System of Classification and Labelling of Chemicals
EINECS: European Inventory of Existing Commercial Chemical Substances
ELINCS: European List of Notified Chemical Substances
CAS: Chemical Abstracts Service
LC50: Lethal concentration, 50%
LD50: Lethal dose, 50%

Full text of R phrases referred to under Sections 2 and 3

20 Harmful by inhalation.
37 Irritating to respiratory system.
43 May cause sensitisation by skin contact.

Full text of H statements referred to under Sections 2 and 3

H317 May cause an allergic skin reaction.
H332 Harmful if inhaled.
H335 May cause respiratory irritation.

Further Information

The above information describes exclusively the safety requirements of the product and is based on our present-day knowledge. The information is intended to give you advice about the safe handling of the product named in this safety data sheet, for storage, processing, transport and disposal. The information cannot be transferred to other products. In the case of mixing the product with other products or in the case of processing, the information on this safety data sheet is not necessarily valid for the new made-up material.